



User Manual

English

**APC Smart-UPS® RT
XLI/XLICH**

**SURT15000/20000 VA
230 Vac**

**Stack/Rack-Mount 6U
Uninterruptible Power Supply**

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Introduction

About this UPS

The American Power Conversion (APC®) Smart-UPS® RT is a high performance uninterruptible power supply (UPS) that provides protection for electronic equipment from utility power blackouts, brownouts, sags and surges. The UPS protects electronic equipment from small utility fluctuations and large disturbances by providing continuous on-line double converted power. The UPS provides battery backup until utility power returns to safe levels or the batteries are fully discharged.

The UPS and the external battery pack (XLBP) are packaged separately.

Unpack package contents

Read the Safety Guide before installing the UPS.

Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage.





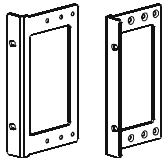

The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents:

<ul style="list-style-type: none"> • UPS • Input wiring tray • Output wiring tray • PowerView display module • Front bezel • DB9 serial cable • Ethernet jumper cable for rear panel network access 	<ul style="list-style-type: none"> • Literature kit containing: <ul style="list-style-type: none"> – Product documentation – Smart-UPS® RT User Manuals CD – Network Management Card Utility CD – Network Management Card documentation – Safety information – Warranty information 	<ul style="list-style-type: none"> • Rack-mount models also include: <ul style="list-style-type: none"> – Rail Kit – Four ornamental screws – Two cage nuts – Two rail cleats – Four pan head screws – Two rack-mount brackets – Eight flat head screws
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NOTE: The model and serial numbers are located on a small, rear panel label. For some models, an additional label is located on the chassis under the front bezel.

Hardware for rack-mount models

4	 Rack-mount units: pan head screws for securing rail cleats to UPS
8	 Flat head screws for securing rack-mount brackets or tie brackets to the unit
4	 Rack-mount units: ornamental screws for securing the unit to the rack
2	 Rack-mount units: cage nuts for rack installation
2	 rack-mount brackets
2	 rail cleats


Specifications

Environmental Specifications

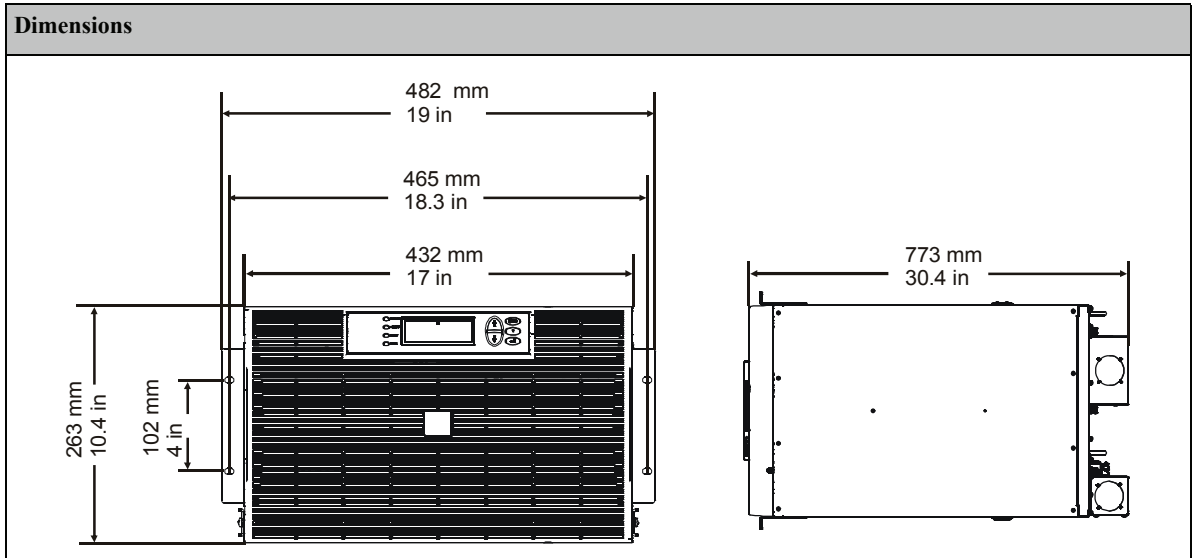
Temperature Operating Storage	32° to 104° F (0° to 40° C) 5° to 113° F (-15° to 45° C) charge the UPS battery every six months 86° to 158° F (30° to 70° C) charge the UPS battery every three months	<p>This unit is intended for indoor use only. Select a location sturdy enough to handle the weight.</p> <p>Do not operate the UPS where there is excessive dust or the temperature or humidity are outside the specified limits.</p> <p>This unit has front to rear airflow. Allow adequate space for proper ventilation.</p> <p>Environmental factors impact battery life. High temperatures, poor utility power, and frequent, short duration discharges will shorten battery life.</p>
Maximum Elevation Operating Storage	10,000 ft (3,000 m) 50,000 ft (15,240 m)	
Humidity	0 to 95% relative humidity, non-condensing	

Physical Specifications

Weight (unpacked)	
UPS	145 lbs (66 kg)
XL Battery Pack with eight battery modules	400 lbs (181 kg)
Each battery module	38 lbs (17 kg)

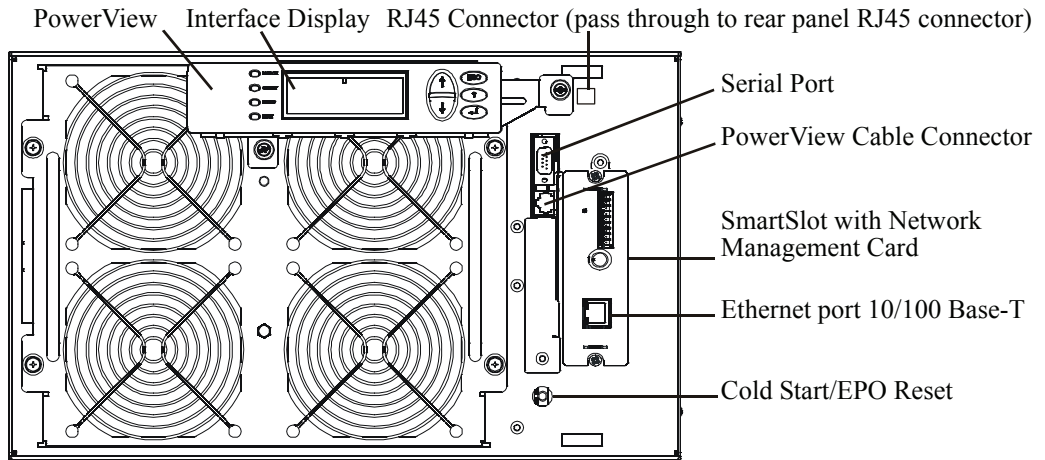


Maximum Number of XLBPs Supported by the Smart-UPS XL	10
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Installation

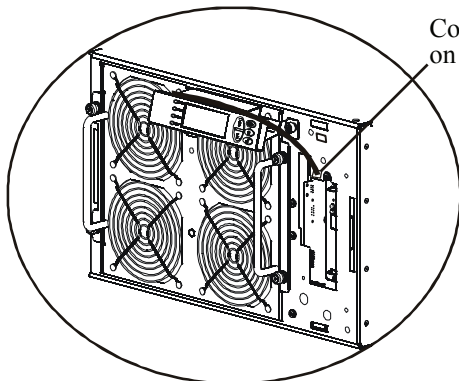
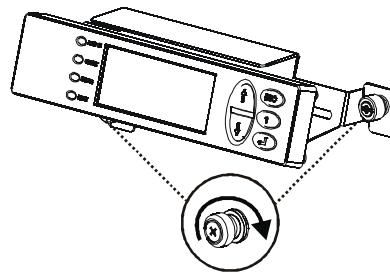
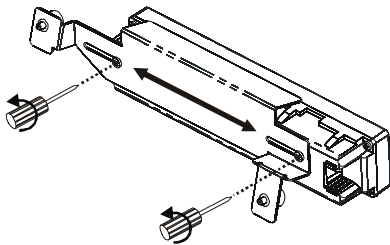
Stack or rack-mount front panel



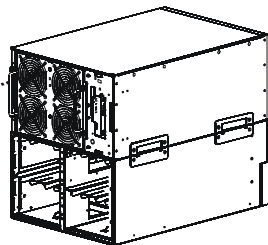
PowerView installation for stack or rack-mount configurations

Prior to attaching the PowerView to the UPS:

1. Loosen the two bracket screws on the back of the PowerView module.
 - a. Slide the bracket to the position that will accommodate the screw holes on the UPS.
 - b. Tighten the screws on the bracket.
2. Secure the PowerView to the UPS using the two thumb screws attached to the PowerView.



Connect the PowerView cable to the PowerView connector on the UPS.



Stack configuration

The UPS and the XLBBP(s) must be connected with ground wires. Refer to the XLBP user manual for details.

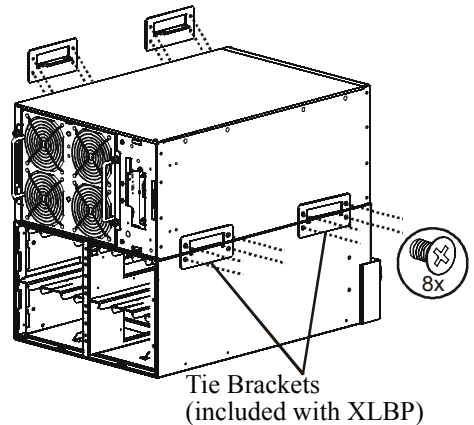
Always place the UPS above the XLBP(s) in a stack configuration.

Total stack configuration height is recommended NOT to exceed 18U. This is the equivalent of two XLBBPs and one UPS.

Four screws must be used to secure each tie bracket to the units, (see diagram).

For detailed instructions on installing batteries, the battery doors, refer to the *Rack-mount configuration* section of this manual.

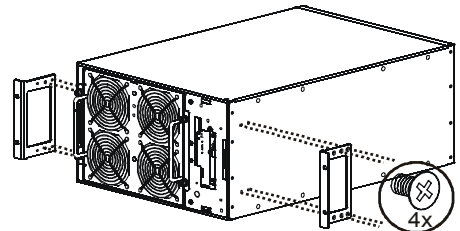
Refer to the *Rack-mount configuration* section in this manual for cable routing and bezel installation details.



Rack-mount configuration

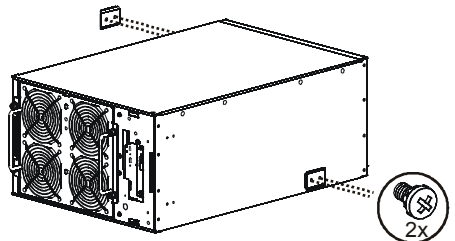
Install rack-mount brackets

Four flat head screws must be used to secure each rack-mount bracket to the unit.



Install rail cleats

Two pan head screws must be used to secure each rail cleat to the unit.



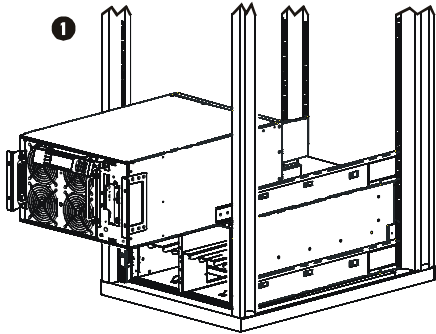
Install rails in rack.

For details on rail installation refer to the instructions included in the rail kit package.

Mount units in rack

The UPS and XLBP should be installed at or near the bottom of the rack. Always place the UPS above the XLBP(s). Batteries must be removed from the XLBP(s) prior to installing the unit(s) in a rack. Refer to the instructions on the packaging for details on removing the batteries from the XLBP.

Install units in rack

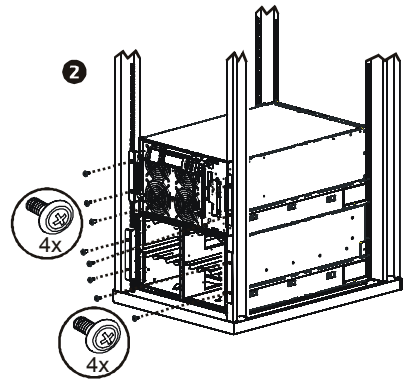
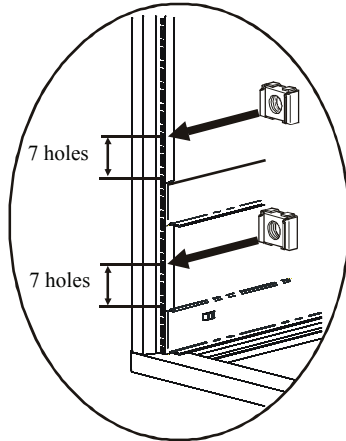


Secure the UPS and the XLBP in the rack using the cage nuts and ornamental screws included in the package.

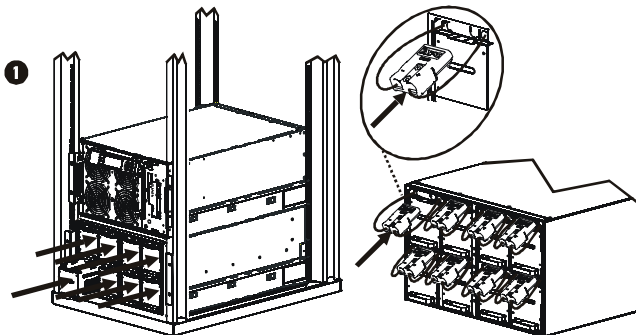
Four ornamental screws and two cage nuts must be used to secure each unit.

A cage nut must be used in the top hole of each rack-mount bracket when securing the unit in the rack.

The bottom hole of each rack-mount bracket can be secured using an ornamental screw in the threaded hole.



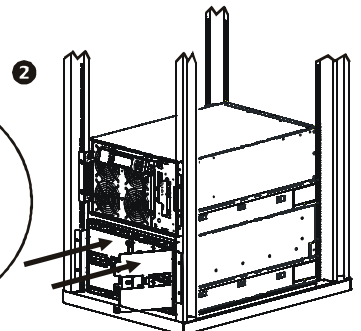
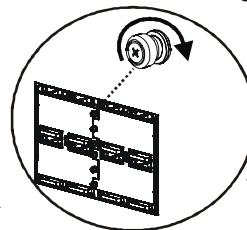
Install and connect battery modules



**Connect all eight battery modules.
Failure to do so may cause equipment damage.**

Replace the battery doors.

Tighten the screws to secure the battery doors.



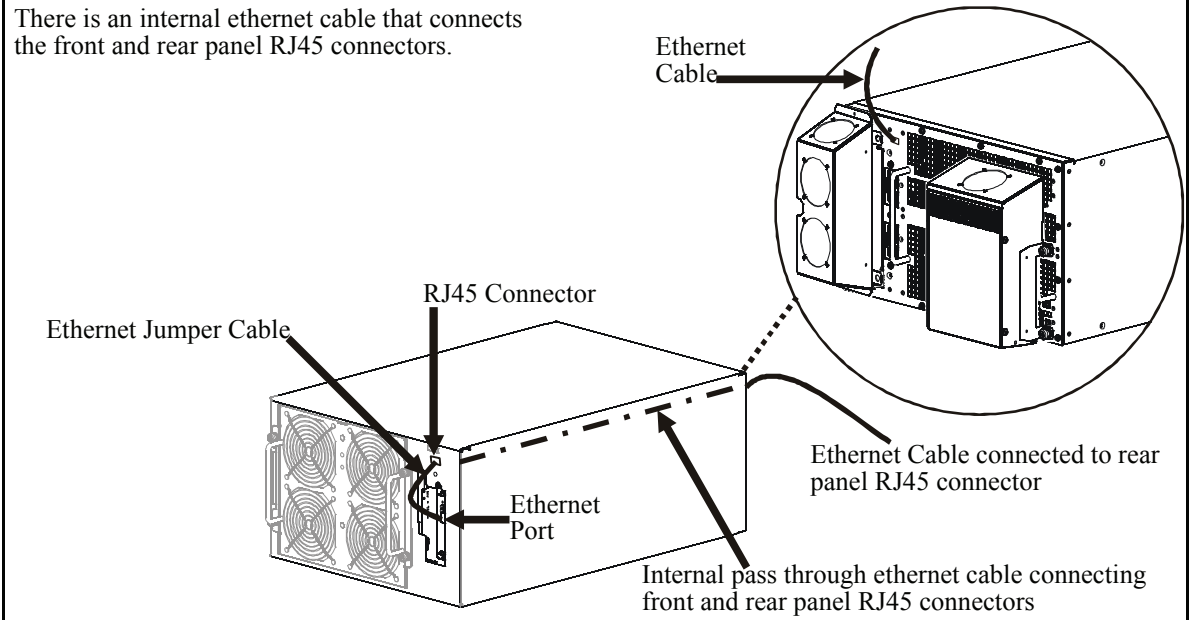
Route ethernet cable and install bezels

Ethernet cable wiring rear panel access

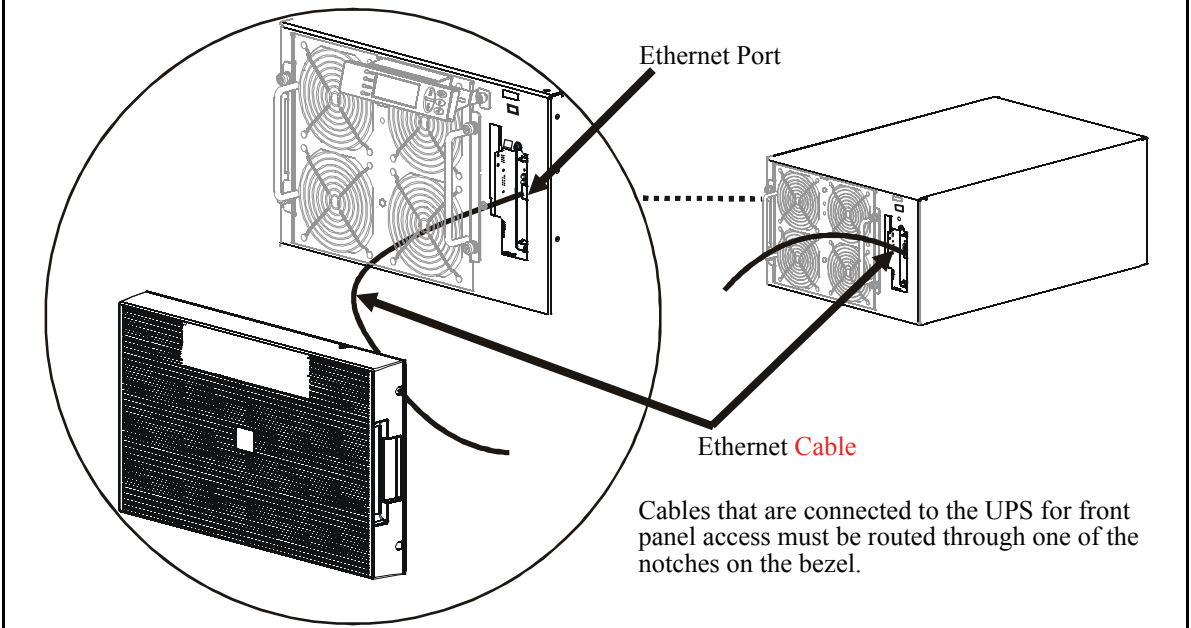
Locate the RJ45 connector and the ethernet port on the front panel of the UPS. Connect the ethernet jumper cable (included), to the RJ45 connector and the ethernet port.

Connect a network cable (not included), to the RJ45 connector on the rear panel of the UPS.

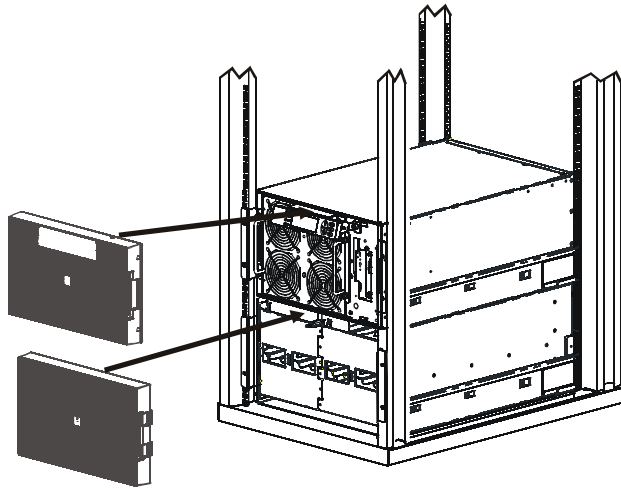
There is an internal ethernet cable that connects the front and rear panel RJ45 connectors.



Ethernet cable wiring front panel access



Install a bezel on the UPS and XLBP(s).



Accessories

Install accessories prior to connecting power to the UPS.

- Refer to the APC Web site, www.apc.com for available accessories.
- User documentation for the Network Management Card installed on this UPS is available on the Utility CD included with this unit.

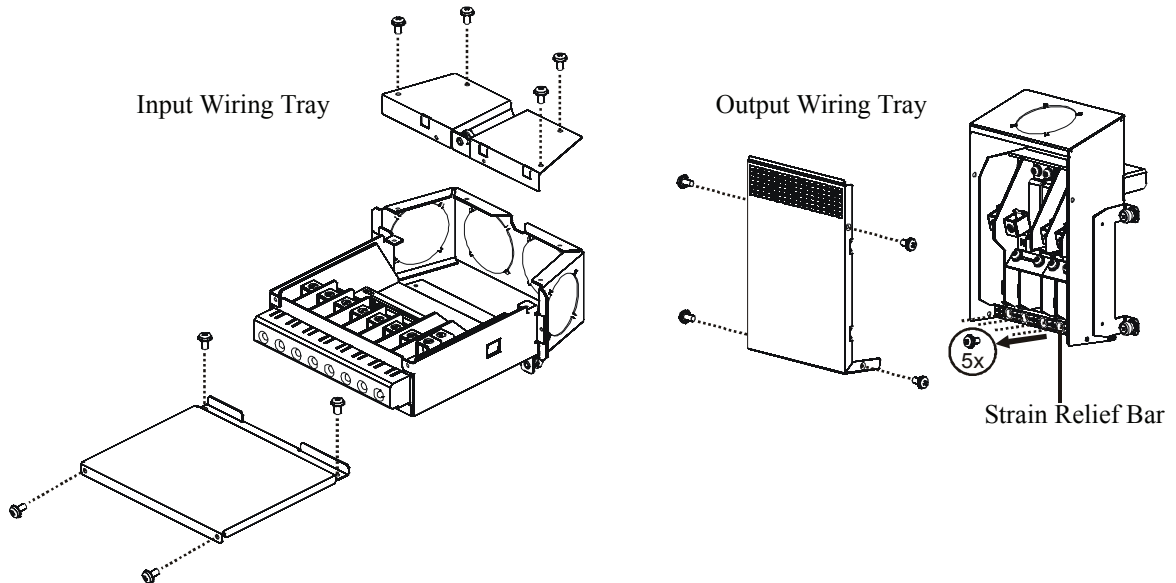
Optional accessories

- Maintenance bypass
- SURT192RMXLBP2
- SURT192XLBP2
- Equipment cart

Hardwire the UPS

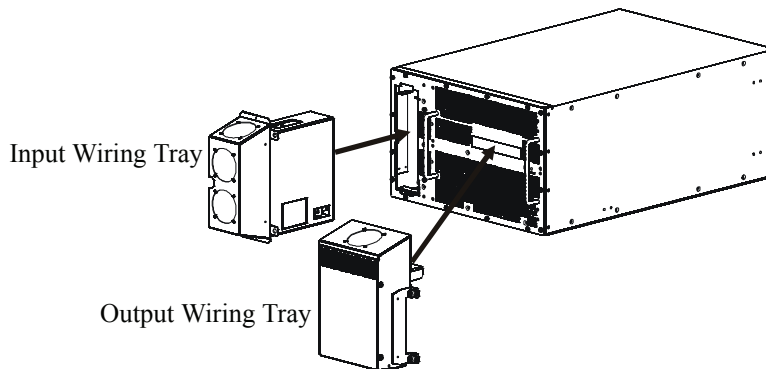
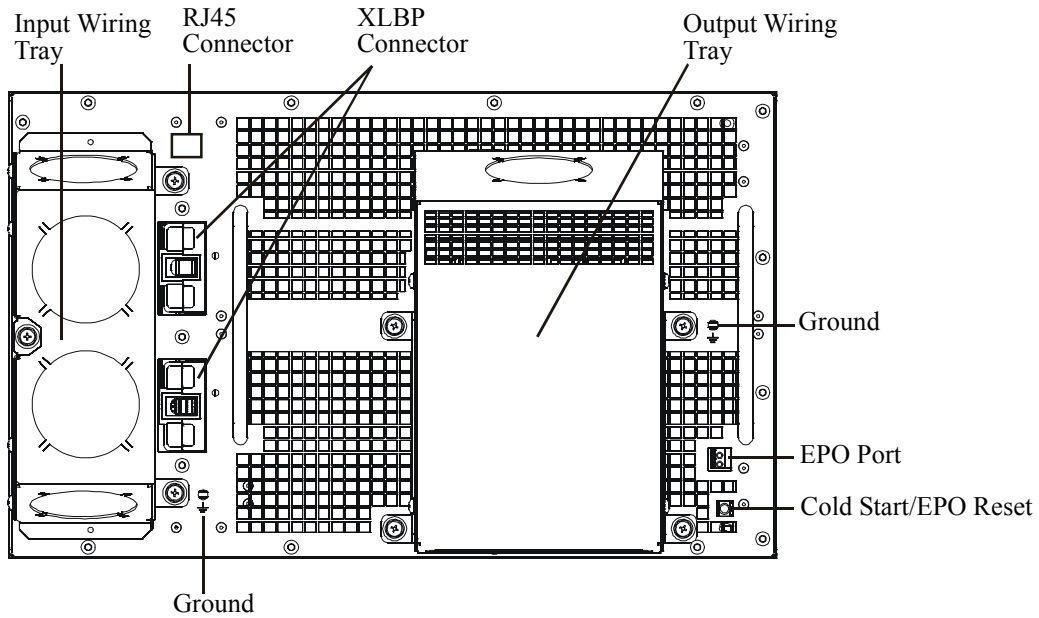
Wiring must be performed by a qualified electrician. Adhere to all local and national electrical codes.

1. For input wiring only, install a utility circuit breaker in accordance with local electrical codes.
2. Switch the utility circuit breaker OFF.
3. Remove the appropriate circular knockouts from the input and output wiring trays.
4. Remove the screws that secure the covers and take the covers off of the trays.
5. Remove the five screws that secure the strain relief bar.










6. Remove the appropriate jumpers for input power source compatibility and output wiring options, (refer to the *Wiring* sections in this manual).
7. Run wires through the knockout holes to the terminal blocks. Wire the ground terminal first, (refer to tables and graphics in the *Wiring* sections this manual).
8. Use strain-relief (not supplied), on the hardwired input and output power cables.
9. **Replace the wiring tray covers. Failure to do so may result in personal injury or equipment damage.**
10. Install the wiring trays, (refer to graphics below).

Install input and output wiring trays in UPS rear panel



Wiring Specifications

Adhere to national and local electrical codes when wiring.

Input Connections	Output Connections
Main Input Single-Phase: Wire to L1, N, and  Three-Phase: Wire to L1, L2, L3, N, and 	Hardwire Single-Phase: Wire to L1, N, and  Three-Phase: Wire to L1, L2, L3, N, and 
Bypass Input (optional) Single-Phase: Wire to B1, N, and  Three-Phase: Wire to B1, B2, B3, N, and 	Single-phase PDU XL battery pack PDU to UPS: Wire L1, N, 

System	Wiring	Number of Phases	Voltage	Current Full Load (maximum)	External Input Circuit Breaker (typical)	Wire Size (typical)*
SURT15000XLI/ XLICH	Input	1	220/230/ 240 Vac	83 A	100 A / 1-pole	25/35 mm ² (2/1 AWG)
	Input	3	380/400/ 415 Vac	28 A / phase	35 A / 3-pole	6 mm ² (8 AWG)
	Output	1	220/230/ 240 Vac	65 A	not required	25 mm ² (2 AWG)
	Output	3	380/400/ 415 Vac	22 A / phase	not required	6 mm ² (8 AWG)
SURT20000XLI/ XLICH	Input	1	220/230/ 240 Vac	105 A	125 A / 1-pole	35/50 mm ² (1/0 AWG)
	Input	3	380/400/ 415 Vac	35 A / phase	50 A / 3-pole	10 mm ² (6 AWG)
	Output	1	220/230/ 240 Vac	87 A	not required	35 mm ² (1 AWG)
	Output	3	380/400/ 415 Vac	29 A / phase	not required	10 mm ² (6 AWG)

* Terminal screw tightening torque: 40 lbf-in (4.5 N-m)

The acceptable input frequency range is 40 to 70 Hz.

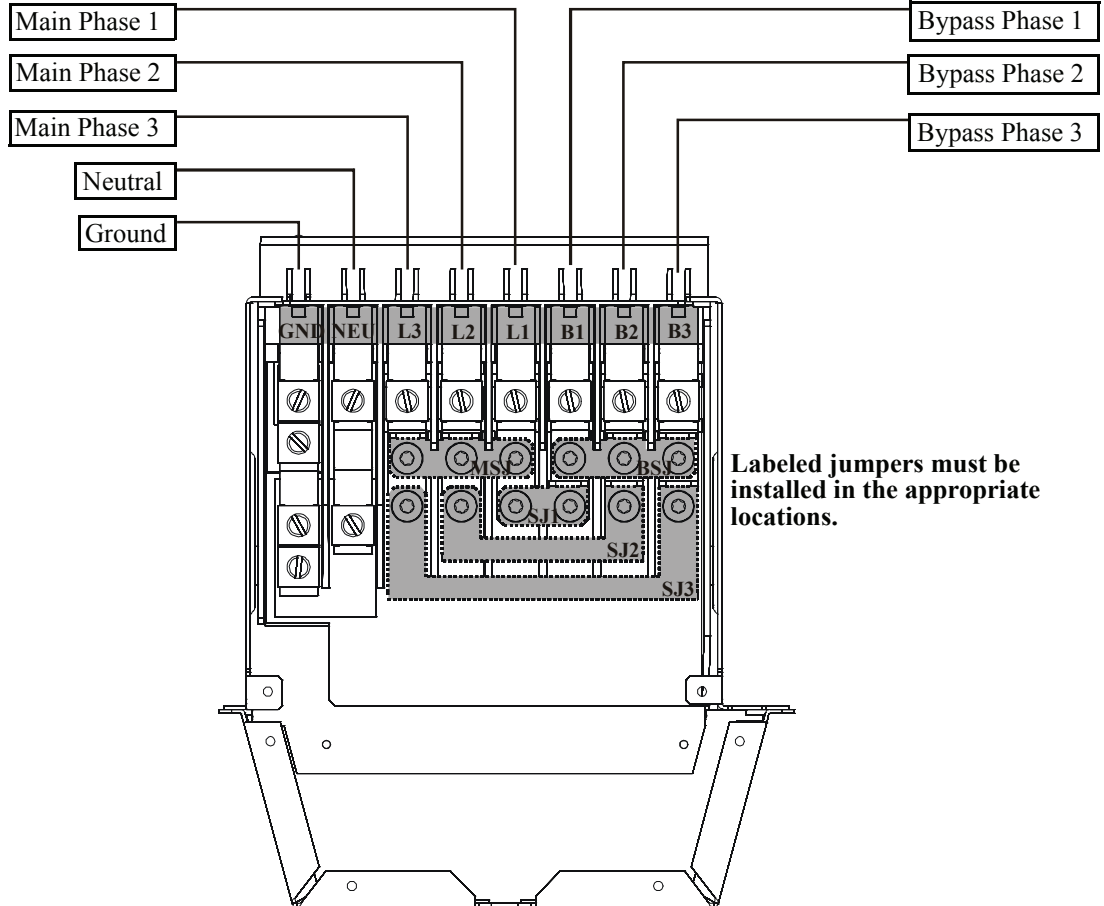
The output frequency is user selectable. Refer to the PowerView display menu screens for available options.

Input wiring options

Input wiring overview: Refer to the diagrams on the following pages for input wiring options.

Main Input Power Single and Three

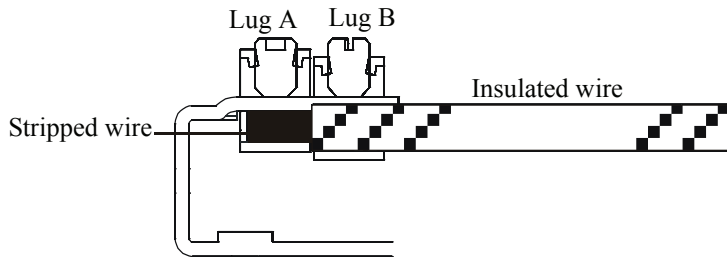
Bypass Input Power Single and Three



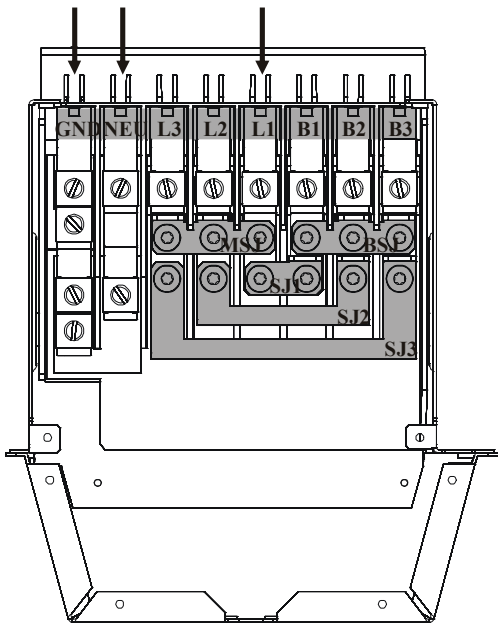
<i>Input/Output Jumper Configurations</i>		Input Jumpers					Output Jumpers
Power I/O Configuration Input:Output	Separate Bypass Feed	SJ1	SJ2	SJ3	MSJ	BSJ	OSJ
1:1**	No	✓	✓ *	✓ *	✓	✓	✓
1:1	Yes				✓	✓	✓
3:1	No	✓				✓	✓
3:1	Yes					✓	✓
3:3	No	✓	✓	✓			
3:3	Yes						
* Optional ** Factory Default							

Ensure ground wire conductor and insulator are securely fastened. To connect the ground wire:

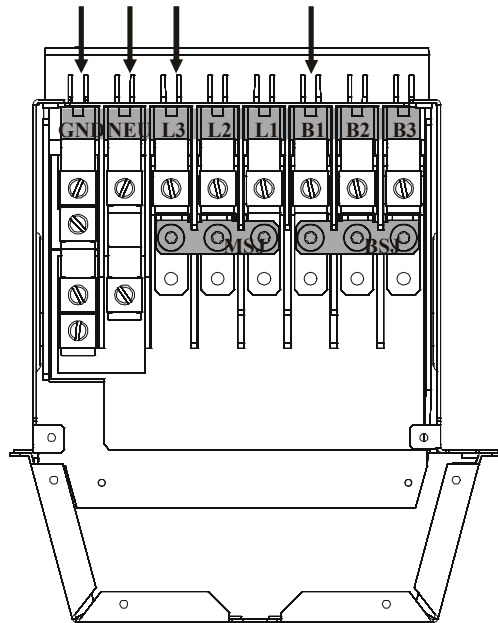
1. Strip the cable of insulation, exposing the wire. Secure the exposed wire with lug “A”.
2. Secure the insulated portion of the cable with lug “B”.



Input wiring option 1 Factory Default
Single phase input, single phase output,
single feed

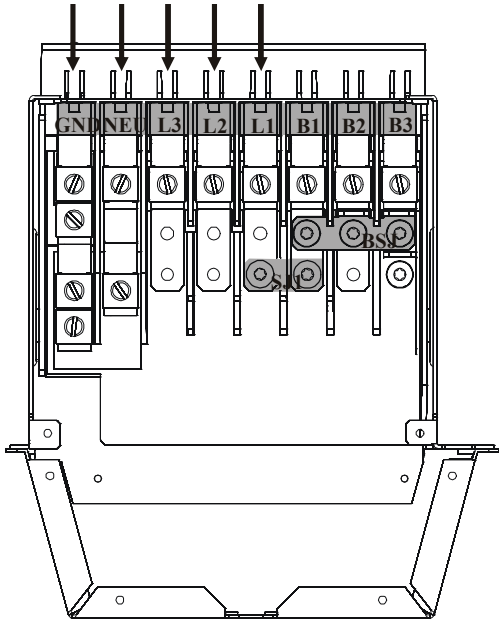


Input wiring option 2
Single phase input, single phase output,
dual feed



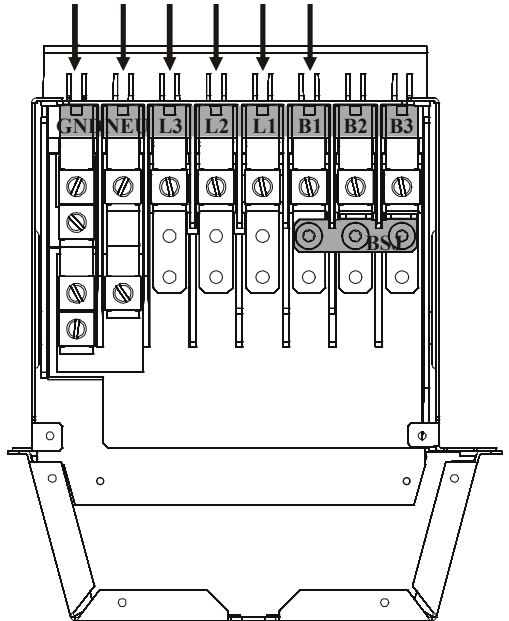
Input wiring option 3

**Three phase input, single phase output,
single feed**



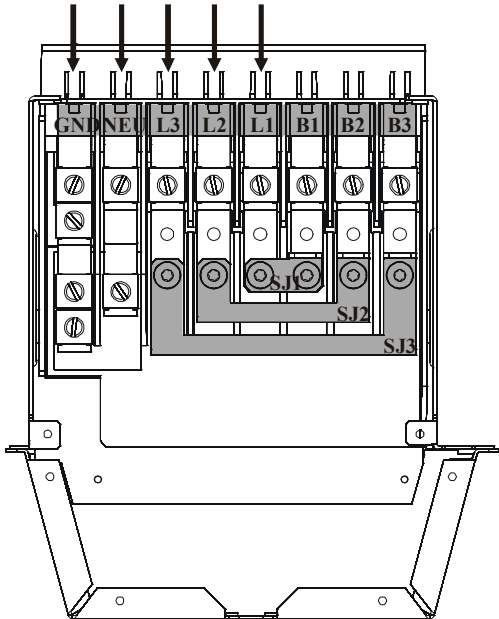
Input wiring option 4

**Three phase input, single phase output,
dual feed**



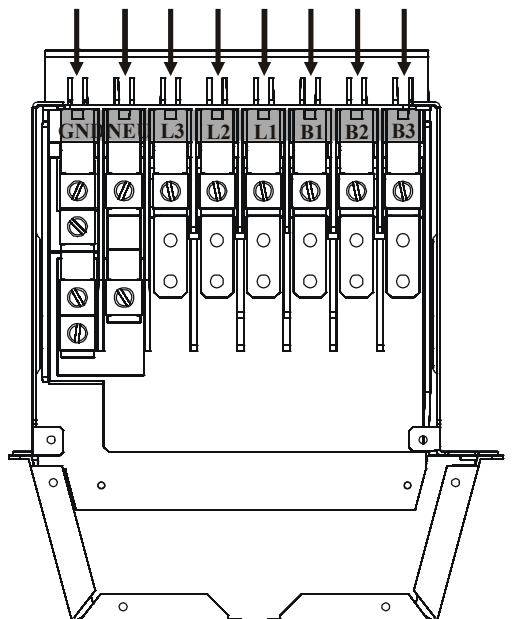
Input wiring option 5

**Three phase input, three phase output,
single feed**



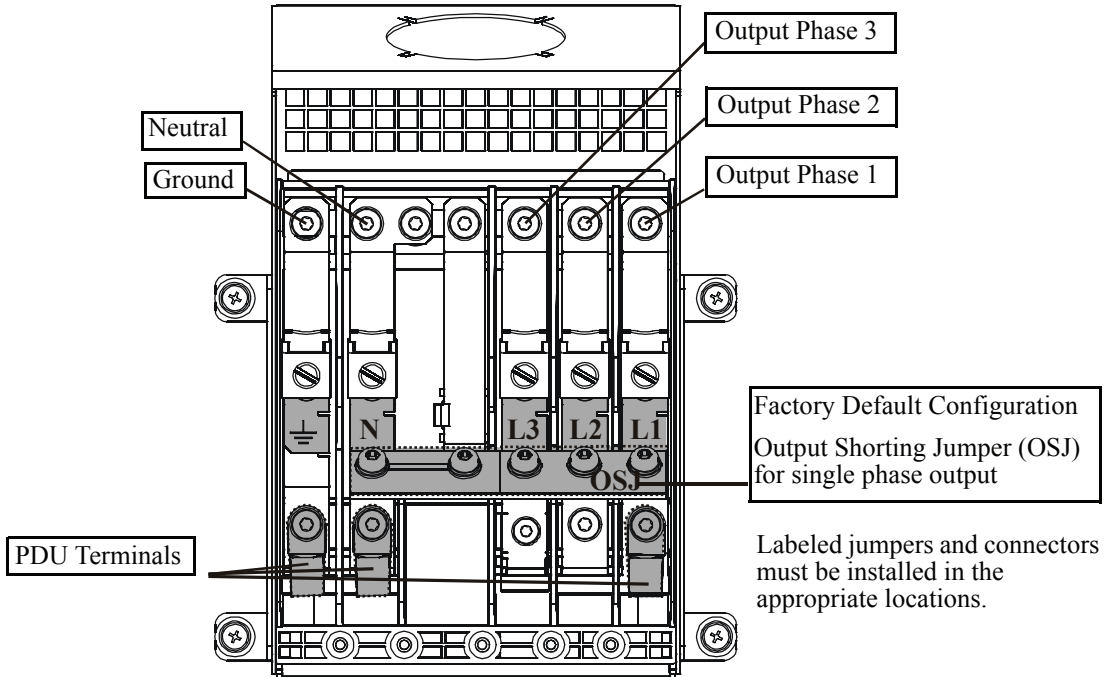
Input wiring option 6

**Three phase input, three phase output,
dual feed**

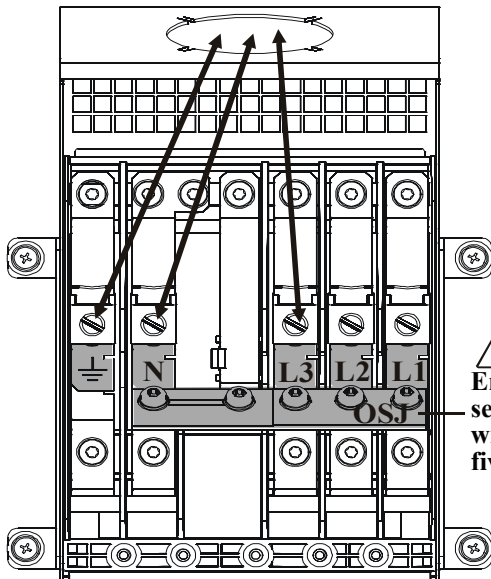


Output wiring options

Output wiring overview. Refer to the diagrams on the following pages for output wiring options.

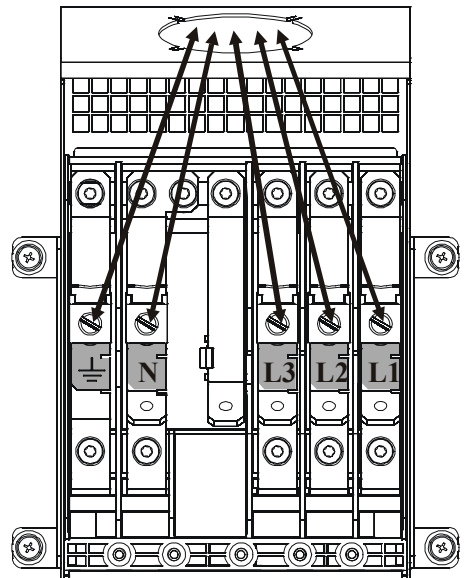


Output hardwire option 1
Single phase hardwire output
connection



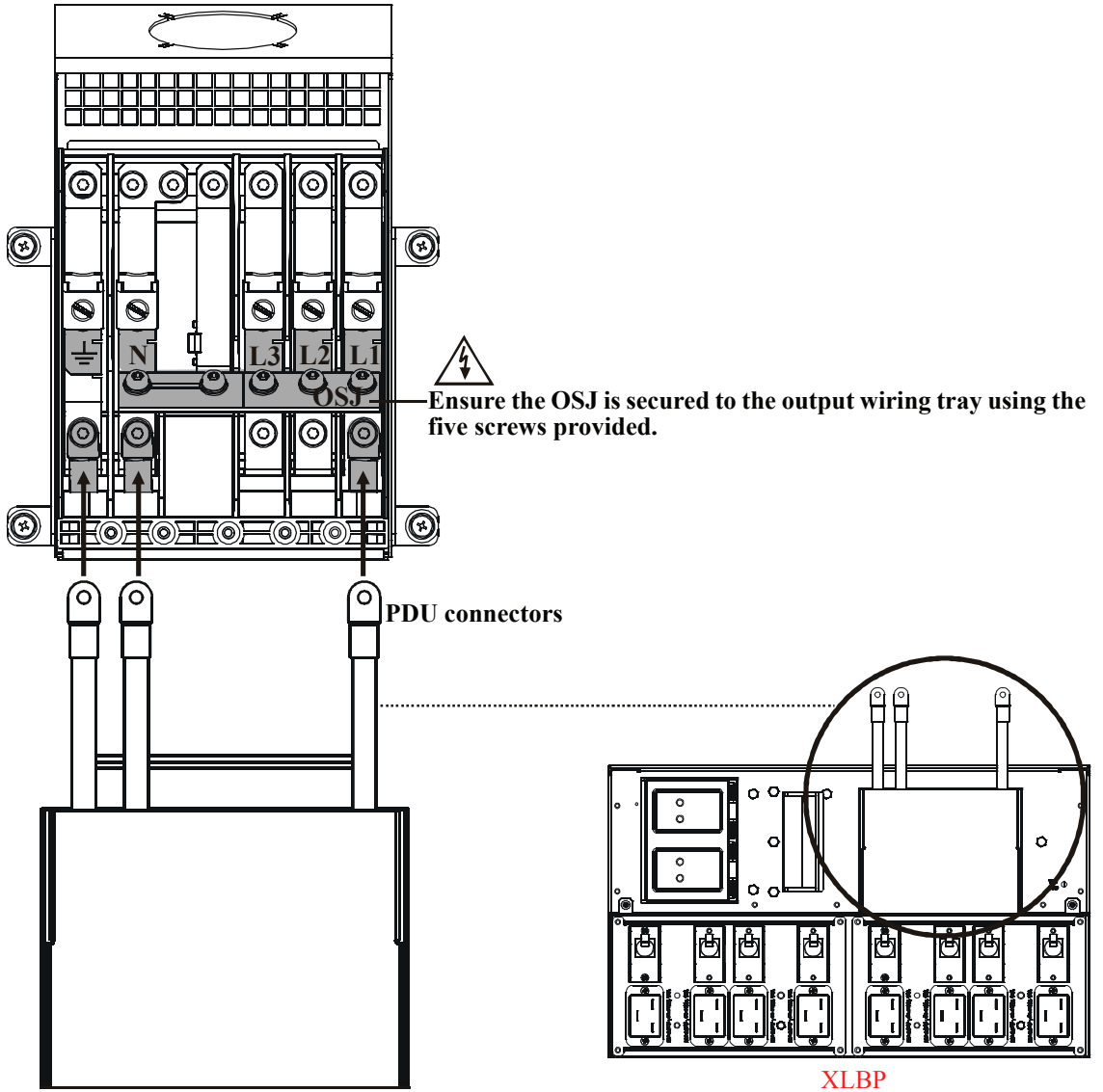
Ensure the OSJ is
secured to the output
wiring tray using the
five screws provided.

Output hardwire option 2
Three phase hardwire output
connection
XLBP PDU not connected
Output shorting jumper (OSJ) removed



Output PDU option

Single phase output connection to battery pack PDU



Operation

The UPS has three operation mode options.

Normal operation

During normal operation, the UPS double converts utility power to conditioned power for the connected load.

Battery operation

During battery operation, the UPS provides power to the connected load from batteries for a finite period of time. The UPS transfers to battery operation if the supply of utility power fails or is outside predefined limits.

Bypass operation

Bypass mode is reached either as a user selection or automatically.

- Bypass mode can be selected through the **Control** menu screen on the PowerView display
- The UPS will automatically switch into bypass mode if:
 - Both normal and battery operation modes are unavailable
 - An output overload condition occurs
 - The UPS has an internal fault

During bypass operation the utility power is connected to the load, bypassing the internal converters. If bypass mode becomes unavailable the UPS will automatically switch to mains power. In the event that mains power is unavailable the system will switch to battery power.

Battery LED

The battery LED is located on the front bezel of the XLBP. During normal operation the LED is not illuminated.

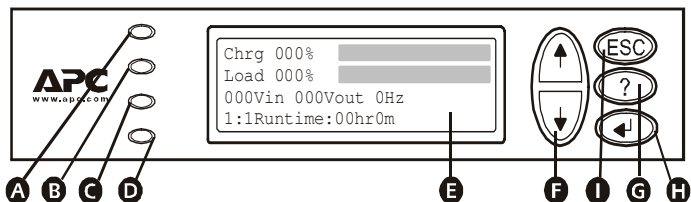
On start-up the XLBP LED may illuminate and blink within the first minute. The LED should then extinguish.

Refer to the XLBP User Manual for details on XLBP operation.

PowerView Interface Display

The four LEDs to the left of the LCD display indicate the operational status of the UPS.

The five navigation keys to the right of the LCD display are used to select and open menu items, to access information, change system parameters, and to access context-sensitive help.




A	LOAD ON	When LED illuminates green, the UPS supplies power to the load
B	ON BATT	When LED illuminates yellow, power to load flows from the batteries to the power module
C	BYPASS	When LED illuminates yellow, power to the load is supplied through bypass
D	FAULT	When LED illuminates red, a fault condition exists
E	LCD Screen	Displays menu screens for alarms, status data, instructional help, and configuration items
F	UP and DOWN navigation keys	Used to scroll through and select menu items
G	HELP key	Opens context-sensitive help
H	ENTER key	Opens menu items and saves changes to system parameters
I	ESC key	Returns to previous screen displayed

Navigating menu screens

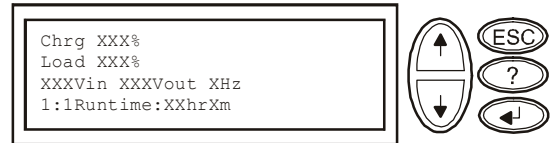
Use the ESC key to navigate between menu screens.

Use the UP/DOWN arrow keys to scroll through the list of sub menus and commands on any screen.

➡ arrow indicates that there are sub menus containing user selectable commands.

Use the ENTER key  to navigate to a sub menu and to select user configurable commands.

To access the overview status screen on the LCD press the ESC key.



To access the main menu screen from the overview status screen, press the ENTER key.



Main Menu Screen

From the main menu screen it is possible to command, configure, and monitor the system using the sub menu screens: **Control**, **Status**, **Setup**, **Logging**, **Display**, **Diags** and **Help** (refer to *Sub menu screens* section in this manual).

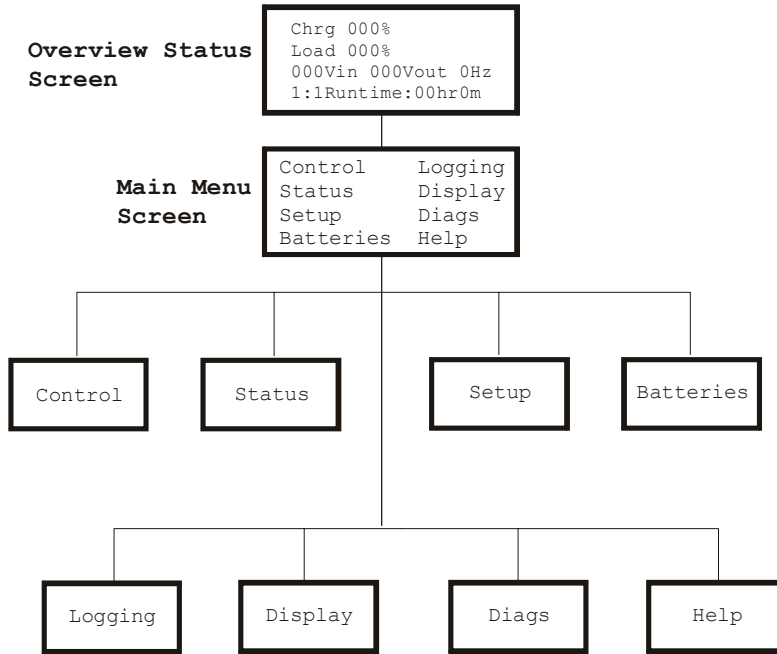
Use the UP/DOWN arrow keys to select the menu to be accessed.

Press the ENTER key to open a sub menu screen.



Menu Tree

The menu tree provides an overview of the top level menu screens.



Navigating sub menu screens

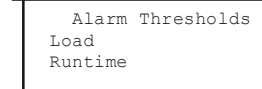
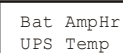
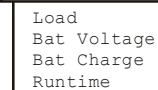
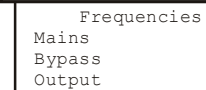
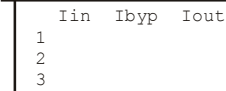
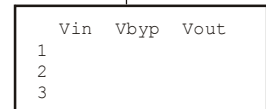
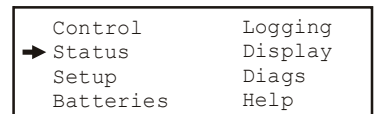
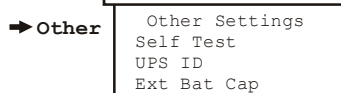
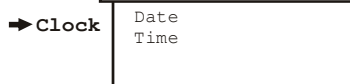
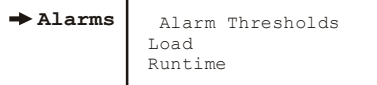
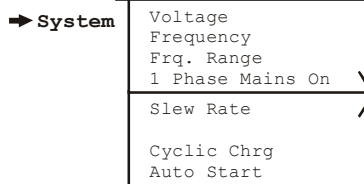
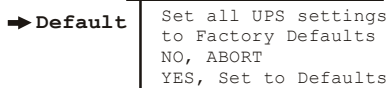
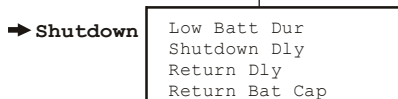
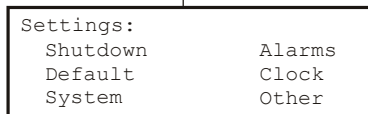
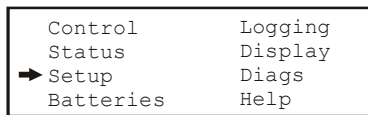
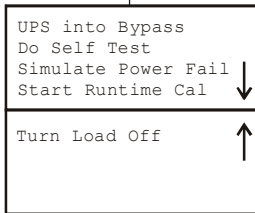
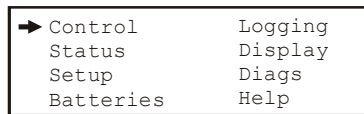
Use the UP/DOWN arrow keys to scroll through the list of functions and commands on a sub menu screen.

A ↓ after the last entry on a sub menu, indicates a continuation of the function/command list.

Use the UP/DOWN arrow keys to view the remaining entries in the list.

Use the ENTER key to select a command and move to sub menus associated with that function/command.

Sub menu screens






Output Frequency Options: Auto Sensing; 50 Hz; 60 Hz

50 Hz frequency range: 50±3 Hz; 50±0.1 Hz

60 Hz frequency range: 60±3 Hz; 60±0.1 Hz

Clock: The date and time functions are used to time-stamp events in the event log. To avoid inaccuracies, change the time setting to reflect day light saving time where applicable.

Ext Bat Cap: Press . Use the UP/DOWN arrow keys to select the desired value. Press  to move to the next digit. Press  after selecting the final value, to lock in the battery capacity setting.

Control	Logging
Status	Display
Setup	Diags
→ Batteries	Help

The PowerView will reference XLBP configuration in the following manner.

External Battery Pack			
BattPair_1		BattPair_2	
Module_1	Module_2	Module_3	Module_4
BattPair_3		BattPair_4	
Module_5	Module_6	Module_7	Module_8

Global Bat Status
Pack Status/Mfg
BatPair Status/Mfg

→ Global Bat Status

+/-BatV
+/-BatI
Max Bat Temp
Charge

+Runtime:
-Runtime:

+/-BatPair
+/-Bad Packs
Bad

→ Pack Status/Mfg
(with LED flashing on selected frame)

APC Battery Diagnostics

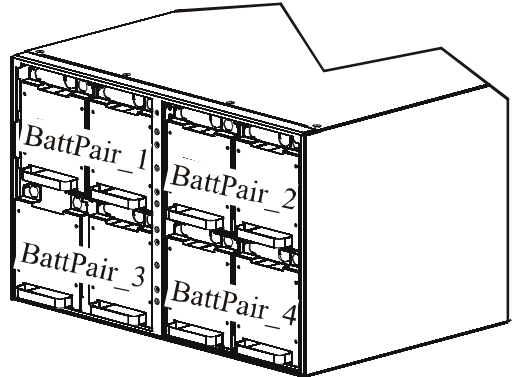
APC Battery Diagnostics

Firmware Revision
MfgDate
Ser#
Model#

→ BattPair Status/Mfg

APC Battery Diagnostics

APC Battery Diagnostics



Control	→ Logging
Status	Display
Setup	Diags
Batteries	Help

Logging Menu
View Log
Clear Log
View Statistics

→ View Log

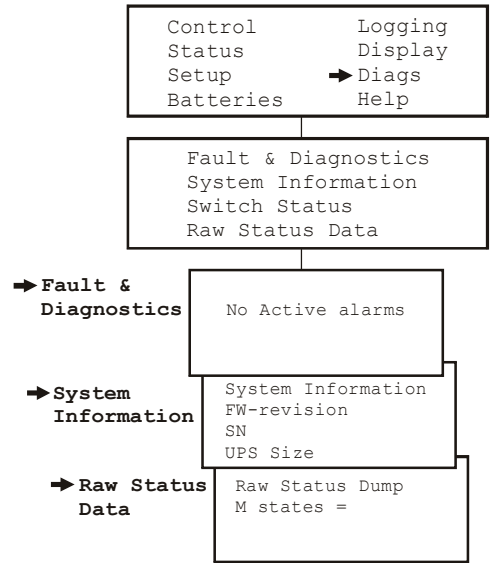
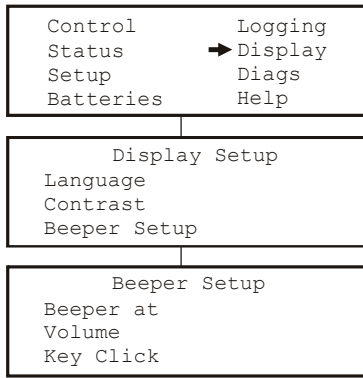
Time and Event of last 100 entries

→ Clear Log

Confirm Clear Log
Yes, Clear Log
No, Abort

→ View Statistics

xxx Transfers->Bat.
xxx Transfers->byp.
xxxxxhr. Inv. Time
xxxhr xxmin on Bat



Start-Up

Connect load to UPS

1. The UPS features chassis ground connection screws located on the rear panel, for connecting the ground leads on transient voltage devices.

Prior to connecting the grounding cable, ensure that the UPS is NOT connected to utility or battery power.

2. Connect equipment to the UPS.

NOTE: This UPS is equipped with an external battery connector on the rear panel of the unit.

 - The battery charges to 90% capacity during the first three hours of normal operation. *Do not* expect full battery run capability during this initial charge period.
 - Refer to the APC Web site, www.apc.com for battery runtimes.
 - Where appropriate use an APC extension battery cable. For ordering details contact your dealer or APC through the Web site www.apc.com.
3. Add optional accessories to the SmartSlot located on the rear panel.

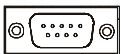
For optimal computer system security, install PowerChute Smart-UPS monitoring software.

Connect power to UPS and load

1. Connect input power to the UPS.
2. Check the PowerView interface display for messages.
3. Turn on the load using the interface display menu options.
 - Bypass mode
 - Turn Load On

Communication Ports

SERIAL PORT Use only the supplied cable to connect to the serial port. A standard serial interface cable is incompatible with the UPS.



The serial port can be used to configure that Network Management Card.

Emergency Power Off (EPO)

The output power can be disabled in an emergency by closing a switch connected to the EPO.

Adhere to national and local electrical codes when wiring.

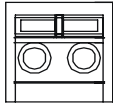
The switch should be connected in a normally open switch contact. External voltage is not required; the switch is driven by 12 V internal supply. In closed condition, 2 mA of current are drawn.

The EPO switch is internally powered by the UPS for use with non-powered switch circuit breakers.

The EPO circuit is considered a Class 2 circuit, (UL, CSA standards) and an SELV circuit (IEC standard).

EPO PORT

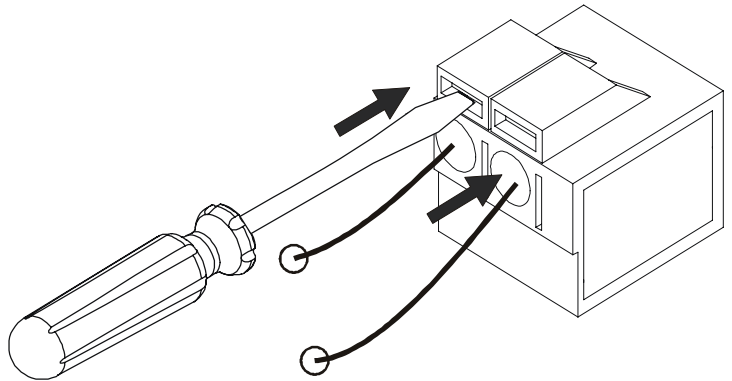
(located on rear panel)



EPO Connector

Strip the insulation from one end of each wire to be used for connecting the EPO.

Insert a screwdriver into the slot above the terminal to be wired. Insert the stripped wire into the terminal. Remove the screwdriver to secure the wire in the terminal. Repeat for each terminal.



Both Class 2 and SELV circuits must be isolated from all primary circuitry. Do not connect any circuit to the EPO terminal block unless it can be confirmed that the circuit is Class 2 or SELV. If circuit standard cannot be confirmed, use a contact closure switch.

Use one of the following cable types to connect the UPS to the EPO switch.

- CL2: Class 2 cable for general use.
- CL2P: Plenum cable for use in ducts, plenums, and other spaces used for environmental air.
- CL2R: Riser cable for use in a vertical run in a floor-to-floor shaft.
- CLEX: Limited use cable for use in dwellings and for use in raceways.
- For installation in Canada: Use only CSA certified, type ELC, (extra-low voltage control cable).
- For installation in other countries: Use standard low-voltage cable in accordance with national and local regulations.

Troubleshooting Display Messages

Use the table below to solve minor installation and operation problems. Refer to the APC Web site, www.apc.com for assistance with complex UPS problems.

The PowerView reports various messages on the display, including alarm status and changes in system configuration. This section lists all the PowerView display messages, the reason for the message, and the appropriate corrective action.

Messages may occur simultaneously. If this happens, be sure to review all of the messages for a better understanding of the system condition.

Condition	PowerView Display Message	Reason for Message	Corrective Action
Start-Up	#Batteries changed since last ON.	At least one battery module has been added or removed from the UPS since the last time the Pwr ON command was issued.	No corrective action necessary. Proceed with the start-up.
	Automatic Self Test Started.	The UPS has started pre-programmed battery test.	
	Batt capacity less than Return Batt Cap.	The battery capacity of the UPS is less than the user-specified minimum battery capacity required to turn on the load.	Option 1) Abort the start-up and allow batteries to recharge. Option 2) Continue start-up, with less than minimum battery capacity.
	System Start-Up Configuration Failed.	System configuration error: Start-up diagnostic fault.	Check for other alarms. If the problem persists contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Mains: Site Wiring Fault	Input and Output Jumpers are not configured correctly	Check input wiring tray jumpers and output shorting jumper for compatibility. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.
	Bypass Not Available - Wrong Ph Seq		Check bypass jumpers in input wiring tray and output shorting jumper for compatibility. Check bypass phases for positive sequence. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.
	Bypass: Site Wiring Fault		Check bypass jumpers in input wiring tray and output shorting jumper for compatibility. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Status	# of batteries increased.	At least one battery pair has been added to the system.	No corrective action is necessary.
	# of batteries decreased.	At least one battery pair has been removed from the system.	
	# External Battery Packs increased.	At least one external battery pack has been connected to the UPS.	
	# External Battery Packs decreased.	At least one external battery pack has been disconnected from the UPS.	
Module Failure	Bad Battery Pair.	A battery pair has failed and requires replacement.	Refer to battery pair installation in the external battery pack user manual.
Threshold Alarm	Load Power Is Above Alarm Limit.	The load has exceeded the user-specified load alarm threshold.	Option 1) Use the display interface to raise the alarm threshold. Option 2) Reduce the load
	Load Is No Longer Above Alarm Threshold.	The load exceeded the alarm threshold. The situation has been corrected. Either because the load decreased or the threshold was increased.	No corrective action is necessary.
	Min Runtime Restored.	The system runtime dropped below the configured minimum and has been restored: 1) Additional battery modules were installed. 2) The existing battery modules were recharged. 3) The load was reduced. 4) The user- specified threshold was decreased.	

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Fault	Need Bat Replacement.	One or more battery pairs are in need of replacement.	Refer to battery installation procedure.
	No Batteries Are Connected.	No battery power is available.	Check that batteries are installed and connected properly.
	Discharged Battery.	The UPS is on battery operation and the battery charge is low.	Shut down the system and the load or restore the incoming voltage.
	Low- Battery.	The UPS is on battery operation and the battery charge is low.	
	Weak Batt(s) Detected. Reduced Runtime.	One or more weak battery pairs detected (only applicable for internal battery modules).	Replace the weak battery pairs.
	Batt Temperature Exceeded Upper Limit.	The temperature of one or more battery packs has exceeded system specifications.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Battery Over-Voltage Warning.	The battery voltage is too high and the charger has been deactivated.	
	Runtime Is Below Alarm Threshold.	The predicted runtime is lower than the user-specified minimum runtime alarm threshold. Either the battery capacity has decreased, or the load has increased.	Option 1) Allow the batteries to recharge. Option 2) If possible, increase the number of battery modules. Option 3) Reduce the load. Option 4) Decrease the alarm threshold.

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Fault	Shutdown Due To Low Battery.	The UPS shutdown while on battery operation.	No corrective action is necessary. Note: Should this situation reoccur, consider increasing battery capacity.
	Bypass Not Available Input Freq/Volt out Of Range.	The frequency or voltage is out of acceptable range for bypass. This message occurs when the UPS is online.	Correct the input voltage to acceptable frequency or voltage.
	Mains Not Available. Input Frq/Volt Out of Range.	The frequency or voltage is out of acceptable range for normal operation.	
	Emergency PSU Fault.	Redundant Emergency Power Supply Unit (PSU) is not working. Internal diagnostic fault. The UPS will continue to operate normally.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Fan Fault	A fan has failed.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Static Bypass Switch Fault.	The static bypass switch has failed.	
	System Failure Detected by Surveillance.	The system has detected an internal error.	Check for other alarms. If the problem persists contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	System Not Synchronized to Bypass.	System cannot synchronize to bypass mode. Bypass mode may be unavailable.	Option 1) Decrease input frequency sensitivity. Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual. Option 2) Correct bypass input voltage to provide acceptable frequency or voltage.
	UPS In Bypass Due To Fault.	The UPS has transferred to bypass mode due to a fault.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	UPS In Bypass Due To Overload.	The load has exceeded the power capacity.	Decrease the load.
UPS Is Overloaded.	The load has exceeded the system power capacity.	Option 1) Decrease the load. Option 2) Check the load distribution on the three phases through the PowerView display. If the load is unevenly distributed, adjust the load distribution.	

Maintenance, Transport, and Service

Replace battery modules

This UPS has easy-to-replace, hot-swappable battery modules. Replacement is a safe procedure, isolated from electrical hazards. You may leave the UPS and connected equipment on during the replacement procedure.

Once the batteries are disconnected the connected equipment is not protected from power outages.

Refer to the appropriate replacement battery user manual for battery module installation instructions. See your dealer or contact APC at www.apc.com for information on replacement battery modules.



Be sure to deliver the spent battery(s) to a recycling facility or ship it to APC in the replacement battery packing material.

Service

If the unit requires service do not return it to the dealer. Follow these steps:

1. Review the problems discussed in the *Troubleshooting* section to eliminate common problems.
2. If the problem persists, contact APC Customer Support through the APC Web site, www.apc.com.
 - Note the model number of the unit, the serial number located on the back of the unit, and the date purchased. If you call APC Customer Support, a technician will ask you to describe the problem and attempt to solve it over the phone. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
 - If the unit is under warranty, repairs are free.
 - Procedures for servicing or returning products may vary internationally. Refer to the APC Web site for country specific instructions.
3. Pack the unit in its original packaging. If this is not available:
 - Pack the unit carefully to avoid damage in transit. Never use Styrofoam beads for packaging.
 - Damage sustained in transit is not covered under warranty.
4. **Always DISCONNECT THE UPS BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) and IATA regulations.** The battery(s) may remain in the unit.
5. Mark the RMA# on the outside of the package.
6. Return the unit by insured, prepaid carrier to the address given to you by Customer Support.

Two-Year Warranty

The limited warranty provided by American Power Conversion (APC®) in this statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

Terms of warranty

APC warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. The obligation of APC under this warranty is limited to repairing or replacing, at its sole discretion, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

Non-transferable warranty

This warranty extends only to the original purchaser who must have properly registered the product. The product may be registered at the APC Web site, www.apc.com.

Exclusions

APC shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation or testing. Further, APC shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, start-up by non-APC designated personnel, a change in location or operating use, exposure to the elements, Acts of God, fire, theft, or installation contrary to APC recommendations or specifications or in any event if the APC serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

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Warranty claims

Customers with warranty claims issues may access the APC customer support network through the Support page of the APC Web site, www.apc.com. Select your country from the country selection pull-down menu. Open the Support tab at the top of the Web page to obtain contact information for customer support in your region.

Contact Information

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Refer to the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
Local, country-specific centers:
go to **www.apc.com/support/contact** for information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

Regulatory Agency Approvals and Radio Frequency Warnings

230 V models



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We, the undersigned, declare under our sole responsibility that the equipment specified below conforms to the following standards and directives:

Harmonized Standards: EN 60950-1; IEC 60950-1; EN 62040-1-1;
EN 55022; EN 55024;
IEC 61000-3-4, 3-5, 4-2, 4-3, 4-4, 4-5, 4-6, 4-11

Applicable Council Directives: 2006/95/EC; 89/336/EEC; 93/68/EEC

Type of Equipment: Uninterruptible Power Supply

Model Numbers: SURT15KRMXLI; SURT20KRMXLI

Manufacturers:

American Power Conversion Ballybritt Business Park Galway, Ireland	American Power Conversion 2nd Street PEZA, Cavite Economic Zone Rosario, Cavite Philippines	APC (Suzhou) UPS Co., Ltd 339 Suhong Zhong Lu Suzhou Industrial Park Suzhou Jiangsu 215021 P. R. China
American Power Conversion Breaffy Rd. Castlebar Co Mayo, Ireland	American Power Conversion Lot 10, Block 16, Phase 4 PEZA, Rosario, Cavite Philippines	APC Power Infrastructure Co., Ltd 1678, Ji Xian Road, Tong An Xiamen, P. R. China 361100
American Power Conversion 132 Fairgrounds Rd. West Kingston, RI 02892 USA	American Power Conversion Lot 3, Block 14, Phase 3 PEZA, Rosario, Cavite Philippines	
American Power Conversion 1600 Division Rd. West Warwick, RI 02892 USA		
American Power Conversion 40 Catamore Blvd. East Providence, RI 02914 USA	APC Brazil LTDA. Al. Xingu, 850 Barueri Alphaville/Sao Paulo 06455-030 Brazil	
APC India Pvt. Ltd. 187/3, 188/3, Jigani Industrial Area, Jigani Bangalore, 562106 Karnataka India		

Importer: American Power Conversion (A. P. C.) b. v.
Ballybritt Business Park
Galway, Ireland

Place: Galway, Ireland Ray S. Ballard, Managing Director, Europe

 5 Jan 07